

STATUS OF ALL CLAIMS

1. (Previously Amended) A method for synthesizing and purifying an oligonucleotide immobilized on a solid support complex, comprising:

a) providing:

- i) a polymer support comprising a long-chain alkyl amine, and
- ii) four pools of deoxyribonucleoside 3'-phosphoramidite monomers in solution, wherein at least one of said monomers contains 9-fluorenylmethoxycarbonyl as an amino protecting group on the nucleotide base;

b) sequentially contacting said polymer support with a solution of monomers from one or more of said four pools under conditions such that a sequence of monomers is immobilized on said polymer support to generate an oligonucleotide/polymer support complex, wherein said complex comprises at least one monomer containing 9-fluorenylmethoxycarbonyl and wherein said solution, after said contacting, comprises unreacted material;

c) treating said complex under conditions such that said unreacted material is substantially removed, thereby creating a purified oligonucleotide/polymer support complex, and

d) treating said purified oligonucleotide/polymer support complex with DBU under conditions whereby said 9-fluorenylmethoxycarbonyl is released and said oligonucleotide is immobilized on said solid support.

2. (Original) The method of claim 1, wherein said deoxyribonucleoside 3'-phosphoramidite monomer containing 9-fluorenylmethoxycarbonyl as an amino protecting group on said deoxynucleoside base is a 9-fluorenylmethoxycarbonyl-2'-deoxycytidine 3'-phosphoramidite.

3. (Original) The method of claim 1, wherein said deoxyribonucleoside 3'-phosphoramidite monomer containing 9-fluorenylmethoxycarbonyl as an amino protecting group on said deoxynucleoside base is a 9-fluorenylmethoxycarbonyl-2'-deoxyadenosine 3'-phosphoramidite.
4. (Original) The method of claim 1, wherein said deoxyribonucleoside 3'-phosphoramidite monomer containing 9-fluorenylmethoxycarbonyl as an amino protecting group on said deoxynucleoside base is a 9-fluorenylmethoxycarbonyl-2'-deoxyguanosine 3'-phosphoramidite.
5. (Original) The methods of claim 1, wherein the number of said monomers immobilized on said polymer support are in a range between one hundred and three hundred monomers.